NRDC Position Statement on Spraying For the Light Brown Apple Moth in California November 14, 2007

Background

The Light Brown Apple Moth (LBAM) is a plant pest that was originally native to Australia. According to the California Department of Food and Agriculture (CDFA), the LBAM was recently discovered for the first time in the United States – in parts of the San Francisco Bay area and central coast of California. CDFA expects that this pest could cause serious damage to natural systems, backyard gardens, and to the economy, including a projected possible economic loss to California of over $100 million. In addition, there is apparently concern that the pest could spread throughout a major portion of the United States. The LBAM does not pose a health threat to people.

CDFA reports that the current infestation by the LBAM is relatively new, and that the population of moths is small. They have consulted with an international panel of expert scientists convened by the USDA which has concluded that it may be possible to eradicate the LBAM in California. As a result of this determination, CDFA declared a state of emergency, has begun an eradication campaign in Monterey County and Santa Cruz, and plans to expand the campaign northward into the San Francisco Bay area.

CDFA is primarily using a pheromone product called CheckMate, applied via aerial spraying. Aerial spraying began in Monterey County in September 2007 and in Santa Cruz County in October 2007. In addition to the aerial spraying, CDFA is using the organophosphate insecticide chlorpyrifos to attempt to eradicate the LBAM at nurseries, and has quarantined areas where the pest has been found.

NRDC's Position: Support for Pheremone-Based Eradication with Reservations

On September 8, 2007, NRDC responded to a request from Assemblymember John Laird stating support for the use of the pheromone CheckMate. The letter stated, in part: "we applaud CDFA's decision to use an approach to the LBAM that relies on the principles of [integrated pest management] and that uses a pheromone-based approach instead of toxic insecticides. We hope that the prompt use of such a strategy will help to avert future use of insecticides to control this pest."

NRDC still believes that there are unlikely to be toxicity concerns with the pheromone spraying. Unlike pesticides, pheromones are not toxic to living things, and would not be expected to have adverse effects on human health or the environment. Pheromones are used in organic agriculture and are a major component of integrated pest management (IPM) approaches. NRDC is also concerned that the establishment of LBAM in California could result in a significant increase of insecticide use in the future as farmers, landscapers and others take matters into their own hands

to control this pest. Therefore NRDC still supports the approach of using pheromones instead of insecticides to eradicate or control this pest. However, numerous valid concerns have arisen over the past months about the aerial spraying program. Some of these concerns relate to health and the environment; others relate to issues of informed consent, autonomy, and public process. NRDC strongly recommends that these concerns be addressed if the spraying program moves forward. The concerns are itemized below.

1. Health Concerns about "Inert" Ingredients and Respirable Particles

Although few people have expressed health concerns about the pheromone itself, the CheckMate product also contains a variety of other ingredients. Some of these "inerts" have raised questions and potential health concerns. Initial reports that the product contained an isocyanate appear to be false.[1] In October, the full list of ingredients was released, and there are no ingredients that are considered to be toxic. However, at sufficiently high doses some of the ingredients (such as tricaprylyl methyl ammonium chloride) might be irritating to the mucus membranes.

According to the manufacturer, the average particle size of the microcapsules is in the range of 100-150 microns (μm). This is a size range that is not considered to be respirable. Particles of this size would lodge in the nose or throat and would not reach the lungs. As such, these particles could potentially be irritating to the upper airways, but are not likely to be a serious health hazard. The full size distribution of the particles in CheckMate remains unclear.

It would be relatively easy to test the spray to ascertain whether there are respirable-range particles in the mixture. To our knowledge that has not been done. It would also be easy to test the final product for isocyanate residues from the manufacturing process. In addition, the inert ingredients suggest the possibility that sensitive individuals might experience some irritation of the mucus membranes and upper airways if exposed to a sufficiently high concentration of this product. CDFA should consult with experts to consider whether there should be special warnings for asthmatics and those with respiratory sensitivities.

2. Need for Improved Environmental Monitoring and Tracking of Health Complaints

It is essential that an aerial spraying program include a well-designed and comprehensive monitoring effort on the ground. It appears that the limited monitoring that is being done on the ground is focused primarily on minimizing carry-over to no-spray zones and on ascertaining that the entire area is adequately covered. Ground-level monitoring for respirable particulate matter, and for airborne concentrations of potentially irritant inert ingredients, is important in order to provide an extra safety check. In addition, monitoring of surface waters to assure that surfactants and phosphates in the product are not impairing local waterways is critical.

Many residents of the Monterey area complained of health symptoms after the spraying. Although it is unlikely that these symptoms are related to toxicity from the spray, the complaints nonetheless need to be taken seriously to make sure that there is no unanticipated problem with the product. Residents have a right to know that any health complaints will be easy to report, diligently mapped and tracked, and investigated fully. Residents have not felt that CDFA is taking their health complaints seriously. Clinical personnel must be available to answer questions and to quickly follow-up on complaints by gathering histories, symptoms, laboratory findings, and clinical findings. If any unusual or unanticipated patterns emerge, it will be essential to detect the problem quickly and reevaluate the program.

[1] An isocyanate, polymethylene polyphenol isocyanate, is apparently used in the manufacture of the product and could conceivably be in the final formulation in trace quantities. Other isocyanate chemicals are known sensitizers and asthmagens.

3. Full Exploration of Alternatives
Alternatives to aerial spraying, such as ground-based spraying and non-spray methods are available (eg. twist-tie applications). CDFA has rejected these approaches as too costly. However in some cases, communities have offered to provide volunteers to help implement these methods. Although the pheromone spray is not considered to be toxic, it would still be more precautionary to avoid spraying any chemicals over inhabited areas. Therefore non-spray alternatives should be fully explored and used whenever at all feasible. For example, if a substantial and well-coordinated volunteer effort were available in a tract to hang twist-ties, that area could potentially be skipped in the aerial spraying. Spraying could then be reserved for forested areas that are too dense to allow practical use of these alternatives.

4. Avoiding Any Use of Pesticides
The emergency exemption that CDFA is using in order to undertake the pheromone spraying can also allow spraying with toxic insecticides. In fact, the highly dangerous insecticide chlorpyrifos is currently being used to spray for LBAM in nurseries. It is essential that CDFA avoid using insecticides except as a last resort. If insecticides must be used, they should be the least toxic available. Choosing an organophosphate insecticide such as chlorpyrifos, that is among the most toxic (and drift-prone) products on the market, sets a bad precedent. If the LBAM infestation spreads, there are serious concerns that there will be broader use of toxic insecticides. NRDC opposes the use of insecticides for LBAM eradication or control, since alternative approaches are available. In particular, we strongly oppose the use of organophosphate products such as chlorpyrifos.

5. Improving Community Outreach and Participation
Public process issues have been a major concern. We have heard many complaints that public meetings have not been scheduled with sufficient lead-time, members of the public feel that their concerns are not taken seriously by CDFA officials, and public notification has not always been adequate prior to spraying events. In addition, CDFA is convening an LBAM Environmental Advisory Task Force, but has been resistant to having community representation in the group. Instead, they are inviting organizations that support the spraying to join the Task Force. CDFA must engage in open and constructive dialogue with those who are raising legitimate concerns about the spraying.

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